

**COMPLIANCE APPLICATION REVIEW DOCUMENTS  
FOR THE CRITERIA FOR THE CERTIFICATION  
AND RECERTIFICATION OF THE  
WASTE ISOLATION PILOT PLANT'S  
COMPLIANCE WITH THE  
40 CFR PART 191 DISPOSAL REGULATIONS:  
FINAL RECERTIFICATION DECISION**

**U.S. Environmental Protection Agency  
Office of Radiation and Indoor Air  
Washington, D.C. 20460**

**March 2006**

## **BACKGROUND**

The Waste Isolation Pilot Plant (WIPP) is a permanent repository for transuranic (TRU) radioactive waste operated by the U.S. Department of Energy (DOE) near Carlsbad, New Mexico. The U.S. Environmental Protection Agency (EPA or Agency) is required by Section 8(f) of the WIPP Land Withdrawal Act (WIPP LWA) of 1992 (Pub. L. 102-579, as amended by the 1996 WIPP LWA Amendments, Pub. L. 104-201) to periodically evaluate whether WIPP continues to comply with subparts B and C of 40 CFR part 191—known as the "disposal regulations"—and to issue or deny a recertification of compliance. DOE is required by the WIPP LWA to submit a recertification application to EPA that will be the basis of EPA's evaluation of whether a recertification of the WIPP's compliance with the disposal regulations should be issued. The Secretary of Energy must submit documentation of the WIPP's continued compliance with the disposal regulations to the Administrator of EPA every five years after the initial receipt of transuranic waste for disposal at the WIPP, until the end of the decommissioning phase.

DOE submitted the Compliance Recertification Application (2004 CRA) on March 26, 2004, as announced by EPA in a Notice of Availability on May 24, 2006 (69 FR 29646). EPA reviewed the application to determine completeness and requested several documents from DOE before deeming the 2004 CRA complete on September 29, 2005, as announced by EPA in a Notice of Completeness on October 20, 2005 (70 FR 61107). This determination indicated that DOE provided information relevant to each applicable provision of the WIPP Compliance Criteria and in sufficient detail for EPA to proceed with a full technical review of the 2004 CRA.

After a thorough review of information submitted by DOE, independent technical analyses, and public comments, EPA made its final decision to recertify WIPP as the Agency concluded that WIPP continues to comply with the disposal regulations. In accordance with requirements under the WIPP Land Withdrawal Act (LWA), EPA's decision was issued within six months of the date of its completeness determination on March 29, 2006.

## ABOUT THIS DOCUMENT

This document is composed of twenty five Compliance Application Review Documents (CARDS). The CARDS contain separate, individual analyses; they have been bound together solely for convenience. Pages are numbered so that readers may identify the CARD they are reading. For example, page 14-60 is page 60 of CARD 14, page 24-22 is page 22 of CARD 24, etc. There is a CARD for each section of the Compliance Criteria for which EPA conducted an independent analysis (e.g., CARD 23 discusses the requirements of 40 CFR 194.23, Models and Computer Codes). These sections are listed below:

194.8	Approval Process for Waste Shipment from Waste Generator Sites for Disposal at the WIPP	194.42	Monitoring
194.14	Content of Compliance Application	194.43	Passive Institutional Controls
194.15	Content of Compliance Recertification Application(s)	194.44	Engineered Barriers
194.21	Inspections	194.45	Consideration of the Presence of Resources
194.22	Quality Assurance	194.46	Removal of Waste
194.23	Models and Computer Codes	194.51	Consideration of Protected Individual (combined with 194.52)
194.24	Waste Characterization	194.52	Consideration of Exposure Pathways
194.25	Future State Assumptions	194.53	Consideration of Underground Sources of Drinking Water
194.26	Expert Judgment	194.54	Scope of Compliance Assessments
194.27	Peer Review	194.55	Results of Compliance Assessments
194.31	Applicability of Release Limits		
194.32	Scope of Performance Assessments		
194.33	Consideration of Drilling Events in Performance Assessments		
194.34	Results of Performance Assessments		
194.41	Active Institutional Controls		

The purpose of the CARDS is to explain the technical basis for EPA's compliance determination for each of the Compliance Criteria. All CARDS follow the same format. For each criterion (e.g., 40 CFR 194.15(a)(1)), a CARD contains: (1) a background section; (2) the requirements; (3) a description of EPA's 1998 Certification Decision and the basis for that decision; (4) a description of the changes identified in DOE's 2004 CRA; (5) a discussion of EPA's evaluation of continued compliance, including a discussion of public comments, if necessary; (6) EPA's Recertification decision; and (7) a list of references (if appropriate).

Where more than one CARD addresses the same topic, EPA has not attempted to reproduce all relevant information in multiple CARDS. Instead, the CARDS indicate when a reader should refer to another CARD for certain information. Certain CARDS are supported by EPA Technical Support Documents that contain more detailed information concerning EPA's

evaluation of specific compliance issues. The CARDS contain references to these Technical Support Documents, as well as to EPA inspection/audit reports and other materials contained in EPA's Air Docket A-98-49. See below for further discussion of Technical Support Documents.

The items listed below identify the item numbers of several frequently referenced documents that may be found in EPA's Air dockets.

DOE Compliance Certification Application (63 FR 27353, 1996): Docket A-93-02, Item II-G-01

DOE Compliance Recertification Application (CRA, 2004): Docket A-98-89, Item II-B2-27

DOE Supplemental CRA Information: Docket A-98-89, Item II-B2

Federal Register Notice of CRA Availability (69 FR 29646, 2004): Docket A-98-49, Item II-B4-1

Federal Register Notice of CRA Completeness (70 FR 61107, 2005): Docket A-98-49, Item II-B4-2

Federal Register Notice of CRA Decision: Docket A-98-49, Item II-B4-3

EPA accepted comments on DOE's 2004 CRA from May 24, 2004, until December 5, 2005. All comments were placed in EPA's docket (A-98-49, Item II-B3). The comments themselves and EPA's responses to them are addressed within the individual CARDS.

## TECHNICAL SUPPORT DOCUMENTS

Below is a list of each EPA Technical Support Document that supports EPA's Recertification decision.

**Docket Number:** A-98-49, II-B1-3

**Title:** Technical Support Document for Section 194.24: Evaluation of the Compliance Recertification Actinide Source Term and Culebra Dolomite Distribution Coefficient Values

**Docket Number:** A-98-49, II-B1-6

**Title:** Technical Support Document for Section 194.23: Review of Changes to the WIPP Performance Assessment Parameters from the Compliance Recertification Application to the Performance Assessment Baseline Calculation, PABC Parameter Review

**Docket Number:** A-98-49, II-B1-7

**Title:** Technical Support Document for Section 194.22/23: Review of WIPP Recertification Performance Assessment Computer Codes, CRA Code Review

**Docket Number:** A-98-49, II-B1-8

**Title:** Technical Support Document for Section 194.23: Models and Computer Codes, PABC Codes Changes Review

**Docket Number:** A-98-49, II-B1-9

**Title:** Technical Support Document for Section 194.24: Review of the Baseline Inventory used in the Compliance Recertification Application and the Performance Assessment Baseline Calculation.

**Docket Number:** A-98-49, II-B1-10

**Title:** Technical Support Document for Sections 194.32 and 194.33: Compliance Recertification Application Re-evaluation of Select Human Intrusion Activities

**Docket Number:** A-98-49, II-B1-11

**Title:** Technical Support Document for Sections 194.25, 194.32 and 194.33: Compliance Recertification Application Review of Features, Events and Processes

**Docket Number:** A-98-49, II-B1-12

**Title:** Technical Support Document for Section 194.23: Review of Changes to the WIPP Performance Assessment Parameters and the Database Migration, CRA Parameter Review

**Docket Number:** A-98-49, II-B1-13

**Title:** Technical Support Document for Section 194.27: Salado Flow Conceptual Models Peer Review

**Docket Number:** A-98-49, II-B1-14

**Title:** Technical Support Document for Section 194.27: Spallings Conceptual Model Peer Review

**Docket Number:** A-98-49, II-B1-15

**Title:** Technical Support Document for Section 194.14: Evaluation of KARST at the WIPP Site

**Docket Number:** A-98-49, II-B1-16

**Title:** Technical Support Document for Section 194.23: Review of the 2004 Compliance Recertification Performance Assessment Baseline Calculation

**Docket Number:** A-98-49, II-B1-17

**Title:** Technical Support Document for Section 194.23: Santos Computer Code in WIPP Performance Assessment

## List of Abbreviations

AMTWP	Advance Mixed Waste Treatment Program
ANPRM	Advance Notice of Proposed Rulemaking
ASME	American Society of Mechanical Engineers
ASTP	Actinide Source Term Program
BID	Background Information Document
BIR	Baseline Inventory Report
CA	Compliance Assessment
CAG	Compliance Application Guidance
CAO	Carlsbad Area Office
CARD	Compliance Application Review Document
CCA	Compliance Certification Application (1998)
CCDF	Complementary cumulative distribution functions
CFR	Code of Federal Regulations
CH-TRU	Contact-handled transuranic waste
CPR	Cellulosics, plastics and rubber material
CRA	Compliance Recertification Application (2004)
Docket	U.S. Environmental Protection Agency's Air Docket
DOE	U.S. Department of Energy (Department)
DQC	Data quality characteristic
DQO	Data quality objective
EMP	Environmental Monitoring Plan
EPA	U.S. Environmental Protection Agency (Agency)
FEPs	Features, Events and Processes
FR	Federal Register
HLW	High-level radioactive waste
INEEL	Idaho National Engineering and Environmental Laboratory
INL	Idaho National Laboratory (as of Spring 2005, formerly INEEL)
IRT	Independent Review Team
LANL	Los Alamos National Laboratories
LHS	Latin hypercube sampling
LLNL	Lawrence Livermore National Laboratory
LLW	Low-level radioactive waste
LWA	Land Withdrawal Act
MCL	Maximum contaminant level
MOU	Memorandum of Understanding
NAS-NRC	National Research Council
NDA	Nondestructive Assay
NDE	Nondestructive Examination
NMED	New Mexico Environment Department
NQA	Nuclear Quality Assurance Program Requirements for Nuclear Facilities
ORNL	Oak Ridge National Laboratory
PA	Performance Assessment
PABC	Performance Assessment Baseline Calculations

PAVT	Performance Assessment Verification Test
PDP	Performance Demonstration Program
PRP	Peer Review Panel
QA	Quality assurance
QAO	Quality assurance objective
QAP	Quality assurance program
QAPD	Quality Assurance Program Description
QAPP	Quality Assurance Program Plan
QAPjP	Quality Assurance Project Plan
QP	Quality Procedure
RFETS	Rocky Flats Environmental Technology Site
RH-TRU	Remote-handled transuranic waste
RTR	Real time radiography
SDWA	Safe Drinking Water Act
SKI	Swedish Nuclear Power Inspectorate
SNL	Sandia National Laboratories
SRS	Savannah River Site
TDS	Total dissolved solids
TP	Team procedure
TRU	Transuranic
TRU QAPD	Transuranic Waste Characterization Quality Assurance Program Document
TSD	Technical Support Document
USDW	Underground source of drinking water
USGS	U.S. Geological Survey
VE	Visual examination
VOC	Volatile organic compound
WAC	Waste Acceptance Criteria
WC	Waste Characterization
WID	Westinghouse Waste Isolation Division
WIPP	Waste Isolation Pilot Plant
WTAC	WIPP Technical Support Contractor
WTS	Washington TRU Solutions
WTWBIR	WIPP Transuranic Waste Baseline Inventory Report